An Interdisciplinary Analysis of Multispectral Satellite Data for Selected Cover Types in the Colorado Mountains, Using Automatic Data Processing Techniques

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Monthly Progress Report for January 1975

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A. Overall Status and Progress to Date

A data set containing ERTS scene ID 1317-17204, SKYLAB SL-2, S192 and topographic data has been completed by overlaying and geometrically correcting all of the data. This data set will be used to evaluate the available spectral bands, make comparisons between the SKYLAB and ERTS data and also to determine how useful the topographic data is for classification purposes. Training fields for the ERTS data have previously been selected because the data was available. The training fields that will be used for SKYLAB data will be the same training fields but will have to be located by line-column coordinates on the geometrically corrected SKYLAB data. This should be accomplished in the first half of February.

The snow-cloud differentiation project (La Sal Mountains test site) is essentially finished and we are in the process of writing the final report. A new classification of snow cover is being performed using the SL-2, S192 geometrically corrected data and the different classes of snow are being correlated with varying proportions of forest and snow cover on the ground using a linear combination of spectral responses. The topographic influence on the snow cover will also be determined in this study. We are still looking into the problems encountered in the absolute calibration of the thermal band of the SL-2, S192 data, in which there is an approximate $20^{o}C$ discrepency between the surface measurements and the absolute values obtained from the data.

Mapping has continued on the SKYLAB S190B 1:250,000 scale enlargements. The excellent resolution of the photographic product allows very detailed mapping of small features. The petrographic analysis of the rock specimens taken from the San Juan test sites has begun and a correlation with their spectral responses should be completed by the next report.

B. Recommendations

None

C. Expected Accomplishments

The SL-3, S192 data which was received in January should be reformatted and ready for analysis by February 15. This data will also be overlayed with ERTS and topographic data before analysis can begin.

D. Significant Results

There are no author identified significant results in this report.

E. Travel

Mike Fleming was in Colorado on January 6 and 7 visiting INSTAAR personnel. A summary of his trip was included in the December Monthly Progress Report. Funds disbursed for this trip amounted to $262.40.